

Having described the invention, the following is claimed:

1. A method for producing a releasable copper foil on a carrier substrate, comprising the steps of:

vapor-depositing a layer of copper onto a carrier substrate having a separation facilitating layer formed thereon, wherein the vapor-deposited layer protects the separation facilitating layer during subsequent processing; and

electrodepositing a layer of copper onto the vapor-deposited layer of the metal, thereby increasing the thickness of the copper layer.

2. A method according to claim 1, wherein said separation facilitating layer includes at least one metal oxide.

3. A method according to claim 2, wherein said metal oxide is selected from the group consisting of: aluminum oxide, tin oxide, chromium oxide, nickel oxide, copper oxide, an oxide of stainless steel and zinc oxide.

4. A method according to claim 1, wherein said separation facilitating layer includes at least one organic material.

5. A method according to claim 4, wherein said separation facilitating layer includes at least one organic material selected from the group consisting of: silane, benzotriazole (BTA), and isopropyl alcohol.

6. A method according to claim 1, wherein said separation facilitating layer has a thickness in a range of 5Å to 1000Å.

7. A method according to claim 1, wherein said carrier substrate is comprised of copper.

8. A method according to claim 7, wherein said separation facilitating layer is a stabilization layer.

9. A method according to claim 8, wherein said stabilization layer includes chromium oxide and zinc oxide.

10. A method according to claim 1, wherein said carrier substrate is comprised of at least one metal from the group consisting of: aluminum, tin, copper, chromium, nickel, stainless steel and plated carbon steel.

11. A method according to claim 10, wherein said separation facilitating layer is comprised of a natural occurring oxide of at least one metal comprising said carrier substrate.

12. A method according to claim 1, wherein said method further comprises applying said separation facilitating layer to said carrier substrate by subjecting the said carrier substrate to a stabilization process.

13. A method according to claim 1, wherein said step of vapor-depositing includes one of physical vapor deposition, chemical vapor deposition and a combination thereof.

14. A method according to claim 13, wherein said step of vapor-depositing includes vacuum deposition.

15. A method according to claim 1, wherein said vapor-deposited layer of copper has a thickness in a range of 50Å to 10,000Å.

16. A method according to claim 1, wherein said electrodeposited layer of copper has a thickness in a range of 1 μm to 35 μm.

17. A method according to claim 1, wherein said carrier substrate has a weight per unit area in a range of 0.5 oz/ft² to 3 oz/ft².

18. A component for use in forming a printed wiring board, comprising:
a carrier substrate;

a separation facilitating layer formed on the carrier substrate;
a vapor-deposited layer of copper on the separation facilitating layer,
wherein the vapor-deposited layer protects the separation facilitating layer; and
an electrodeposited layer of copper on the vapor-deposited layer.

19. A component according to claim 18, wherein said separation facilitating layer includes at least one metal oxide.

20. A component according to claim 19, wherein said metal oxide is selected from the group consisting of: aluminum oxide, tin oxide, chromium oxide, nickel oxide, copper oxide, an oxide of stainless steel and zinc oxide.

21. A component according to claim 18, wherein said separation facilitating layer includes at least one organic material.

22. A component according to claim 21, wherein said separation facilitating layer includes at least one organic material selected from the group consisting of: silane, benzotriazole (BTA), and isopropyl alcohol.

23. A component according to claim 18, wherein said separation facilitating layer has a thickness in a range of 5Å to 1000Å.

24. A component according to claim 18, wherein said carrier substrate is comprised of copper.

25. A component according to claim 24, wherein said separation facilitating layer is a stabilization layer.

26. A component according to claim 25, wherein said stabilization layer includes chromium oxide and zinc oxide.

27. A component according to claim 18, wherein said carrier substrate is comprised of at least one metal from the group consisting of: aluminum, tin, copper, chromium, nickel, stainless steel and plated carbon steel.

28. A component according to claim 27, wherein said separation facilitating layer is comprised of a natural occurring oxide of at least one metal comprising said carrier substrate.

29. A component according to claim 18, wherein said separation facilitating layer is a stabilization layer.

30. A component according to claim 1, wherein said vapor-deposited layer of copper is formed by one of physical vapor deposition, chemical vapor deposition and a combination thereof.

31. A component according to claim 30, wherein said vapor deposition includes vacuum deposition.

32. A component according to claim 18, wherein said vapor-deposited layer of copper has a thickness in a range of 50Å to 10,000Å.

33. A component according to claim 18, wherein said electrodeposited layer of copper has a thickness in a range of 1 µm to 35 µm.

34. A component according to claim 18, wherein said carrier substrate has a weight per unit area in a range of 0.5 oz/ft² to 3 oz/ft².

35. A component according to claim 1, wherein said vapor-deposited layer of copper is formed by a combustion chemical vapor deposition process.